

Claims

- 1 1. An apparatus for receiving electromagnetic signals, comprising:
2 an antenna,
3 a selection device for definition of predetermined frequency ranges, with the
4 selection device being associated with the antenna,
5 a frequency converter by means of which the frequency of the received
6 signals can be converted to an intermediate frequency and which is associated
7 with the selection device,
8 a device which provides a reference frequency and is associated with the
9 frequency converter,
10 an assembly which is associated with the frequency converter, the assembly
11 comprises a first frequency filter, which defines a first and a second frequency
12 range, and
13 a receiving device which is associated with the assembly.
- 1 2. The apparatus according to Claim 1, in which the first frequency filter comprises a
2 first and a second filter, with which the first and the second frequency range,
3 respectively, are associated.
- 1 3. The apparatus according to Claim 2, in which the first and/or second filter (26, 27)
2 are bandpass filters.
- 1 4. The apparatus according to Claims 1, 2 or 3, in which the first frequency range is
2 matched to the intermediate frequency.
- 1 5. The apparatus according to Claims 1, 2 or 3, in which the second frequency range
2 is matched to the difference between the intermediate frequency and the
3 separation between the associated transmission and reception channels.
- 1 6. The apparatus according to Claims 1, 2 or 3, in which the width of the second
2 frequency range is matched such that three channels are covered at the same time.

- 1 7. The apparatus according to Claims 1, 2 or 3, in which the intermediate frequency
2 is essentially equal to the separation between two associated transmission and
3 reception channels.
- 1 8. The apparatus according to Claims 1, 2 or 3, in which the selection device
2 comprises a second frequency filter, which is preferably defined by a third and a
3 fourth filter and which preferably comprises a first switch.
- 4 9. The apparatus according to Claim 8, in which the third and the fourth filter are
5 associated with a reception and transmission band, respectively, preferably in
6 accordance with GSM Standard.
- 1 10. The apparatus according to Claims 1, 2 or 3, in which the selection device
2 comprises a bandpass filter and/or a high-pass filter and/or a low-pass filter.
- 1 11. The apparatus according to Claims 1, 2 or 3, in which the device which provides a
2 reference frequency comprises an oscillator and/or a PLL stabilization device.
- 1 12. The apparatus according to Claims 1, 2 or 3, which comprises an amplifier
2 between the selection device and the frequency converter, and/or an amplifier
3 between the frequency converter and the assembly.
- 1 13. The apparatus according to Claims 1, 2 or 3, in which the receiving device is
2 associated with the first filter, and which apparatus comprises a field strength
3 meter for the received signals.
- 1 14. The apparatus according to Claims 1, 2 or 3, in which the assembly (44)
2 comprises a second switch (48).
- 3 15. The apparatus according to Claim 14, in which a first and a second connection of
4 the second switch are associated with the first and the second filter, respectively,

5 and a third connection of the second switch is associated with the receiving
6 device, so that the receiving device is connected to the first filter when the second
7 switch is in a first state, and the receiving device is connected to the second filter
8 when the second switch is in a second state.

1 16. The apparatus according to Claims 1, 2 or 3, which comprises a field strength
2 meter for the received signals, which is associated with the receiving device.

1 17. A method for testing the freedom or occupancy of radio connecting channels,
2 in which a first switch is switched from a first state, in which a receiving
3 apparatus receives electromagnetic signals via a third and a first filter, to a second
4 state, in which a field strength meter receives signals via a fourth and a second
5 filter, and

6 after a predetermined time, is switched back from the second state to the first
7 state without the onward switching and/or backward switching, changing a
8 reference frequency for converting the signals to an intermediate frequency in a
9 defined manner.

1 18. A method for testing the freedom or occupancy of radio connecting channels,
2 in which a first and a second switch are each switched, essentially at the same
3 time, from a first state, in which a receiving apparatus receives electromagnetic
4 signals via a third and a first filter, to a second state, in which the receiving
5 apparatus receives signals via a fourth and a second filter, and

6 after a predetermined time, are in each case switched back from the second
7 state to the first state, essentially at the same time, without the onward switching
8 and/or backward switching, changing a reference frequency for converting the
9 signals to an intermediate frequency in a defined manner.

1 19. The method according to Claim 17 or 18, in which the onward and backward
2 switching of the first and/or second switch takes place essentially during a
3 reception pause.